Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (previously presented): An apparatus for detecting dislodgement of a needle inserted into a patient comprising:

a sensor capable of detecting wetness due to blood wherein the sensor includes a capacitive sensor; and

a barrier pad capable of absorbing blood lost from the patient due to the dislodgment of the needle; and

a sensor holder adapted to secure the sensor and the barrier pad adjacent to the needle, wherein the sensor holder secures the barrier pad between the sensor and the needle such that the sensor does not contact blood upon detection thereof.

Claims 2 to 4 (canceled).

Claim 5. (previously presented): The apparatus of Claim 1 wherein the capacitive sensor includes one or more electrodes.

Claim 6. (currently amended): The apparatus of Claim ~~5~~ 1 wherein the capacitive sensor is located within the sensor holder such that the sensor detects wetness due to blood loss in the barrier pad.

Claim 7. (original): The apparatus of Claim 1 wherein the sensor produces a signal upon detection of blood loss.

Claim 8. (original): The apparatus of Claim 7 further comprising a control device adapted to receive the signal for monitoring and controlling blood loss due to the dislodgement of the needle during hemodialysis.

Claim 9. (original): The apparatus of Claim 8 wherein the control device is attached to the patient.

Claim 10. (original): The apparatus of Claim 1 wherein the needle comprises a venous needle.

Claim 11. (previously presented): An apparatus for detecting needle dislodgement during hemodialysis comprising:

a sensor holder having a cavity;

a barrier pad capable of absorbing blood lost from the patient due to the dislodgment of the needle; and

a capacitive sensor comprising an electrode enclosed within the cavity of the sensor holder such that the capacitive sensor is capable of detecting wetness absorbed within the barrier pad from blood due to needle dislodgement during hemodialysis such that the capacitive sensor does not contact blood upon detection thereof.

Claim 12. (original): The apparatus of claim 11 wherein the electrode comprises a single plate electrode.

Claim 13. (currently amended): The apparatus of claim 11 ~~further comprising a sterile pad such that the capacitive sensor detects wetness due to blood loss into the sterile pad overlying~~ wherein the barrier pad overlies a vascular access region of a venous needle.

Claim 14. (previously presented): The apparatus of claim 13 wherein the sensor holder comprises a flexible material that adaptably conforms to the vascular access region such that the capacitive sensor is capable of detecting blood loss due to needle dislodgement.

Claims 15 to 16 (canceled).

Claim 17. (previously presented): An apparatus for controlling blood loss from a patient during hemodialysis comprising:

a barrier pad capable of absorbing blood lost from the patient due to the dislodgment of the needle; and

a sensor capable of detecting wetness due to blood and a sensor holder adapted to secure the sensor and the barrier pad adjacent to the patient such that the sensor produces a signal indicative of wetness detected within the barrier due to blood loss from the patient upon dislodgement of a venous needle inserted into the patient wherein the sensor includes a capacitive sensor and the capacitive sensor does not contact blood upon detection thereof; and

a controller capable of processing the signal to prevent blood flow through the venous needle such that blood loss from the patient due to dislodgement of the venous needle is minimized.

Claim 18. (original): The apparatus of Claim 17 wherein the sensor holder comprises a pad configuration overlying an access region of the venous needle.

Claim 19. (currently amended): The apparatus of Claim 17 ~~further comprising a sterile pad overlying~~ wherein the barrier pad overlies an access region of the venous needle ~~such that the sensor detects wetness in the sterile pad due to blood loss from the patient upon venous needle dislodgement~~.

Claim 20. (currently amended): The apparatus of Claim 19 wherein the sensor ~~contacts the sterile pad to detect wetness therein~~ detects a change in a dielectric constant of the barrier pad.

Claim 21. (original): The apparatus of Claim 19 wherein the sensor is located inside of the sensor holder such that the sensor does not contact the sterile pad upon detecting wetness therein.

Claim 22 (canceled).

Claim 23. (original): The apparatus of Claim 17 wherein the controller is in communication with a hemodialysis machine via an electrical communication cable or a cordless interface to minimize blood loss due to venous needle dislodgement.

Claim 24. (original): The apparatus of Claim 23 wherein the controller is adapted to monitor one or more hemodialysis treatment parameters including wetness due to blood loss, change in blood flow and detection of arterial air bubbles during hemodialysis.

Claim 25. (original): The apparatus of Claim 24 wherein the controller is attached to the patient for electrical connection to the sensor.

Claim 26. (original): The apparatus of Claim 24 wherein the controller comprises a display for monitoring each of the parameters.

Claim 27. (previously presented): A method of detecting needle dislodgement comprising the steps of:

providing a barrier pad capable of absorbing blood lost from the patient due to the dislodgment of the needle; and

providing a sensor capable of detecting wetness due to blood wherein the sensor includes a capacitive sensor that does not directly contact blood upon detection thereof;

inserting a needle into a patient; and

securing the sensor and the barrier pad to the patient such that the sensor detects blood absorbed within the barrier pad on the patient upon dislodgement of the needle.

Claim 28 (canceled).

Claim 29. (original): The method of Claim 27 wherein the needle comprises a venous needle inserted into the patient for hemodialysis.

Claim 30. (previously presented): A method of controlling blood loss from a patient due to needle dislodgement comprising the steps of:

providing a sensor capable of detecting wetness due to blood wherein the sensor includes a capacitive sensor;

providing a barrier pad capable of absorbing blood lost from the patient due to the dislodgment of the needle; and

inserting a needle into the patient;

securing the sensor and the barrier pad adjacent to the patient such that the sensor produces a signal indicative of wetness within the barrier pad due to blood loss from the patient upon dislodgement of the needle and does not directly contact blood upon detection thereof; and

processing the signal to prevent blood flow through the venous needle such that blood loss from the patient due to needle dislodgement is minimized.

Claim 31 (canceled).

Claim 32. (original): The method of Claim 30 wherein the needle comprises a venous needle inserted into the patient for hemodialysis.

Claim 33. (original): The method of Claim 32 wherein the signal is processed for communicating with a hemodialysis machine to minimize blood loss to the patient due to needle dislodgement.

Claim 34. (original): The method of Claim 33 wherein the signal is processed to shut-off a blood pump of the hemodialysis machine.

Claim 35. (original): The method of Claim 33 wherein the signal is processed to activate a venous line clamp for preventing blood flow via the venous needle.

Claim 36. (previously presented): A method of providing dialysis to a patient comprising the steps of:

providing a barrier pad;

providing a sensor capable of detecting wetness due to blood wherein the sensor includes a capacitive sensor that does not contact blood upon detection thereof;

inserting a venous needle into the patient;

securing the sensor and the barrier pad in juxtaposition to the venous needle;

passing blood through the venous needle via a hemodialysis machine; and

detecting wetness within the barrier pad indicative of blood loss from the patient upon dislodgement of the venous needle such that the sensor does not directly contact blood.

Claim 37. (previously presented): The method of Claim 36 wherein blood flow through the venous needle is stopped upon detecting dislodgement of the venous needle such that blood loss from the patient is minimized.

Claim 38 (canceled).